

What is claimed is:

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1. A universal serial bus (USB) remote host control driver, comprising:
- a connection to a network, said network further connecting to one or more
- USB device adapters, each of said device adapters having a discrete network
- address;
- a network protocol stack, said protocol stack for encapsulating USB
- packets in network packets and for decapsulating USB packets from network
- 10 packets; and
- a memory for storing the network address of each of said device adapters
- and for storing an identification of each USB device connected to each of said
- device adapters.
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2. The USB remote host control driver of claim 1, further comprising:
- a polling routine, said polling routine contacting each of said device
- adapters, identifying each of said USB devices, and storing the identifications in
- said memory.
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3. The USB host control driver of claim 1, where the network packets are
- Ethernet packets.

4. A USB device adapter comprising:

one or more USB ports;

a connection to a network, said network connected to a USB remote host control driver;

5 a network address;

a network protocol stack, said protocol stack for encapsulating USB packets in network packets and for decapsulating USB packets from network packets.

10 5. The USB host control driver of claim 4, where the network packets are Ethernet packets.

6. An Internet gateway, comprising:

a connection to the Internet; and

15 a universal serial bus (USB) remote host control driver, said USB remote host control driver having:

(a) a connection to a local network, said local network further connecting to one or more USB device adapters, each of said device adapters having a discrete network address;

20 (b) a local network protocol stack, said protocol stack for encapsulating USB packets in local network packets and for decapsulating USB packets from local network packets;

(c) a memory for storing the network address of each of said device adapters and for storing an identification of each USB device connected to each of said device adapters; and

(d) a polling routine, said polling routine contacting each of said  
5 device adapters, identifying each of said USB devices, and storing the  
identifications in said memory.

7. The Internet gateway of claim 6, where the local network is an Ethernet.

10 8. The Internet gateway of claim 6, further comprising:  
a processor, said processor for receiving unencapsulated USB packets from  
the protocol stack.

15 9. The Internet gateway of claim 8, further comprising:  
a connection to a local video monitor.

10. The Internet gateway of claim 8, further comprising:  
a connection to a local telephone.

20 11. The Internet gateway of claim 8, further comprising:  
a connection to a public television cable.

12. The Internet gateway of claim 8, further comprising:  
a connection to a public telephone network.
13. A method for providing a signal from a USB device over a local network to  
5 a local processor, the method comprising:  
generating a USB packet at the USB device;  
encapsulating the USB packet in one or more network packets;  
transmitting the network packets over the network;  
decapsulating the USB packet from the network packets; and  
10 providing the USB packet to the processor.
14. The method of claim 13, wherein the local network is an Ethernet.
15. The method of claim 13, wherein the USB device is a keyboard.
16. A method for establishing a connection between a local processor and a  
USB device over a local network, the method comprising:  
configuring a USB device adapter candidate list, said list including the  
network address of at least one USB device adapter;  
20 polling an address on the candidate list, said polling including encapsulating  
a USB packet in one or more network packets;

receiving a positive response from a USB device adapter to said polling,  
said receiving including decapsulating a USB packet from one or more network  
packets; and

adding the address and a USB device adapter identifier to a master list.

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17. The method of claim 16, further comprising:

polling a port on a USB adapter device on the master list, said polling  
including encapsulating a USB packet in one or more network packets;

receiving a positive response from a USB device connected to said port,  
said receiving including decapsulating a USB packet from one or more network  
packets; and

enumerating a USB device in the operating system of the processor.

18. A method for providing a signal from a USB device to a processor on the

15 Internet, the method comprising:

generating a USB packet at the USB device;

encapsulating the USB packet in one or more local network packets;

transmitting the local network packets over a local network;

decapsulating the USB packet from the local network packets;

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encapsulating the USB packet in one or more IP packets;

transmitting the IP packets over the Internet; and

providing the IP packets to the processor.

19. An apparatus for providing a signal from a USB device over a local network to a local processor, comprising:

means for generating a USB packet at the USB device;

means for encapsulating the USB packet in one or more network packets;

5 means for transmitting the network packets over the network;

means for decapsulating the USB packet from the network packets; and

means for providing the USB packet to the processor.

20. The apparatus of claim 19, wherein the local network is an Ethernet.

21. The apparatus of claim 19, wherein the USB device is a keyboard.

22. An apparatus for establishing a connection between a local processor and a USB device over a local network, comprising:

15 means for configuring a USB device adapter candidate list, said list including the network address of at least one USB device adapter;

means for polling an address on the candidate list, said means for polling including means for encapsulating a USB packet in one or more network packets;

20 means for receiving a positive response from a USB device adapter to said polling, said means for receiving including means for decapsulating a USB packet from one or more network packets; and

means for adding the address and a USB device adapter identifier to a master list.

23. The apparatus of claim 22, further comprising:

5 means for polling a port on a USB adapter device on the master list, said means for polling including means for encapsulating a USB packet in one or more network packets;

means for receiving a positive response from a USB device connected to said port, said means for receiving including means for decapsulating a USB  
10 packet from one or more network packets; and

means for enumerating a USB device in the operating system of the processor.

24. An apparatus for providing a signal from a USB device to a processor on  
15 the Internet, comprising:

means for generating a USB packet at the USB device;

means for encapsulating the USB packet in one or more local network packets;

means for transmitting the local network packets over a local network;

20 means for decapsulating the USB packet from the local network packets;

means for encapsulating the USB packet in one or more IP packets;

means for transmitting the IP packets over the Internet; and

means for providing the IP packets to the processor.

25. A program storage device readable by a machine, embodying a program of  
5 instructions executable by the machine to perform a method for providing a signal  
from a USB device over a local network to a local processor, the method  
comprising:

generating a USB packet at the USB device;

encapsulating the USB packet in one or more network packets;

10 transmitting the network packets over the network;

decapsulating the USB packet from the network packets; and

providing the USB packet to the processor.

26. The device of claim 25, wherein the local network is an Ethernet.

27. The device of claim 25, wherein the USB device is a keyboard.

28. A program storage device readable by a machine, embodying a program of  
instructions executable by the machine to perform a method for establishing a  
20 connection between a local processor and a USB device over a local network, the  
method comprising:



configuring a USB device adapter candidate list, said list including the network address of at least one USB device adapter;

polling an address on the candidate list, said polling including encapsulating a USB packet in one or more network packets;

5 receiving a positive response from a USB device adapter to said polling, said receiving including decapsulating a USB packet from one or more network packets; and

adding the address and a USB device adapter identifier to a master list.

10 29. The device of claim 28, wherein the method further comprising:

polling a port on a USB adapter device on the master list, said polling including encapsulating a USB packet in one or more network packets;

receiving a positive response from a USB device connected to said port, said receiving including decapsulating a USB packet from one or more network packets; and

15 enumerating a USB device in the operating system of the processor.

30. A program storage device readable by a machine, embodying a program of instructions executable by the machine to perform a method for providing a signal from a USB device to a processor on the Internet, the method comprising:

generating a USB packet at the USB device;

encapsulating the USB packet in one or more local network packets;

transmitting the local network packets over a local network;  
decapsulating the USB packet from the local network packets;  
encapsulating the USB packet in one or more IP packets;  
transmitting the IP packets over the Internet; and  
providing the IP packets to the processor.

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